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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/038,230	03/11/1998	TSUGUO KOYANAGI	1217-980347	8053
28289	7590	07/13/2006	EXAMINER	
THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219			METZMAIER, DANIEL S	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



**Office Action Summary**

Application No.

09/038,230

Applicant(s)

KOYANAGI ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2006 and 25 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |



### DETAILED ACTION

Claims 1, 5, and 6 are pending.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(f) he did not himself invent the subject matter sought to be patented.

2. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al, US 5,316,854, as evidenced by Ching, US 4,373,060. Lin et al (example VI) discloses the combination Ludox LS (DuPont), acetic acid, and  $\gamma$ -glycidolpropyl trimethoxysilane (A-187). Ludox LS is a 30 % by weight of silica having a low Na<sub>2</sub>O content. Said composition reads on applicants claimed compositions as represented by the evidence of record.

Ching (column 4, line 66, to column 5, line 14) disclose Ludox LS (DuPont) has a low sodium content (Low Sodium) of 0.35% calculated as Na<sub>2</sub>O, a particle size of 10 to 30 millimicrons (equal 10 to 30 nanometers, nm). A Na<sub>2</sub>O of 0.35 % by weight equals a weight ratio of silica to Na<sub>2</sub>O of 285.7 silica/ Na<sub>2</sub>O. Said ratio reads on that claimed.

The dispersion media is an aqueous solution. Instant Table 2 on page 24 specifically sets forth the dielectric constant for water as 77, which reads on the instant claimed range of 10 to 85. See instant Table 1 for the molecular polarizability of  $\gamma$ -glycidolpropyl trimethoxysilane (A-187), which reads on those claimed. Applicants



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(instant specification at page 9, line 5 et seq) specifically include organic acids in the compositions.

Applicants product-by-process limitations do not distinguish the compositions, which otherwise read on the Lin et al reference as evidenced by Ching. Attention is directed to MPEP 2113.

The limitation of claim 5 is clearly present in the Lin et al reference since the compositions have ionic components, i.e., acetic acid, present.

***Allowable Subject Matter***

3. Claim 6 is allowable over the prior art.

***Response to Arguments***

4. Applicant's arguments filed March 24, 2006 have been fully considered but they are not persuasive.

5. Applicants (pages 4 and 5) assert the Lin et al is not surface modified by a silane. Applicants assert the organic compound is used as a matrix that the oxide particles are dispersed. This has not been deemed persuasive for the following reasons.

(1) The claims are drafted as product-by-process. Applicants' claims do not exclude the further incorporation of inorganic oxides throughout the materials claimed. Applicants intend composite materials. Furthermore, applicants bear the burden of coming forward with objective evidence that the process imparts patentable distinction to the composition where a *prima facie* case has been made out. Applicants have not met their burden.



(2) Example VI specifically discloses the use of LUDOX LS, which would have sodium oxide, which at least some would be on the surface. Lin et al (example VI) discloses the organic compound (silane) is employed in a system having acetic acid, which is a known hydrolysis catalyst therefore. Since the hydrolysis/condensation is known to be an equilibrium reaction, it is reasonable to expect at least some of the silica surface to be reacted (i.e., condensed) with the organic compound (i.e., silane).

6. Applicants (page 5) assert the Lin et al reference employs much more silane than the instant examples. Initially, any increase in silane would result in an increased surface treatment based on accepted chemical equilibrium principles. See preceding paragraph. Regarding the concentration of the reference, applicants claims do not recite any concentration limitations and therefore do not distinguish the reference on this basis.

7. Applicants' (page 5) assertions that LUDOX LS is not a composite oxide have not been deemed persuasive. Applicants' arguments regarding the asserted structures of composite particles have not been deemed persuasive since applicants have not shown said composites to be distinct from the LUDOX LS materials. Lin et al discloses colloidal sodium silicates, i.e.,  $(\text{SiO}_2)_x(\text{Na}_2\text{O})_y \cdot z\text{H}_2\text{O}$ . Applicants set forth at page 5, line 20, that examples of inorganic oxides other than  $\text{SiO}_2$  include elements of Group IA of the periodic table, which includes sodium.

8. Applicants (pages 5 and 6) assert the references do not teaches the composite particles are not formed by the same methods as applicants. This has not been deemed persuasive since a *prima facie* case of obviousness having been presented,



the burden of coming forward with objective evidence to rebut said *prima facie* case of obviousness shifts to applicants. Applicants have not provided any objective evidence. Said claims are drafted in product by process format. It is the product that is examined, not the method said product is formed.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

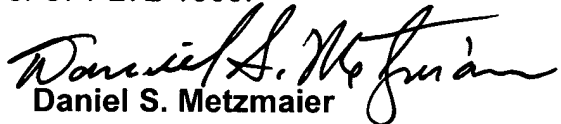
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM